



United States Air Force Memorial

Quick Facts

Overview

- The United States Air Force Memorial will honor the millions of patriotic men and women who have distinguished themselves in the United States Air Force and its predecessor organizations.
- Some 54,000 airmen have been killed in action while serving in the Air Force and its predecessor organizations.
- The Air Force is the only branch of service without any memorial in the Washington D.C. area commemorating its service to the nation.
- The Memorial will be located in Arlington, Virginia at a promontory overlooking the Pentagon, the Potomac River and all of Washington D.C.
- Public Law 103-163, dated December 2, 1993 authorized the establishment of a United States Air Force Memorial on Federal land.
- In lieu of any previously approved location, Public Law 107-107, dated December 28, 2001, directed the Secretary of Defense to make available the promontory land at the Naval Annex for the Memorial.
- Total cost for the construction of the Memorial is in excess of \$30M.
- The Memorial is to be completed in September 2006, with the official Dedication Ceremony taking place on Saturday and Sunday, October 14th and 15th, 2006.

The Spire Design

- Featuring three stainless steel spires that soar skyward, the Memorial's design is truly representative of the Air Force and is intended to evoke flight and the flying spirit.
- The three spires also represent the three core values of the Air Force - integrity first, service before self, and excellence in all that is done. Equally important, they represent the Air Force's Total Force—active, guard and reserve—which are all essential to getting the mission done.
- Finally, the three spires are reminiscent of the precision "bomb burst" maneuver performed by the United States Air Force Thunderbird Demonstration Team.
- The highest of the Memorial's spires will ascend 270 feet (82 meters).
- The base of the Memorial is approximately 132 feet above sea level, meaning that at its highest point, the structure will stand 402 feet high.

- Each spire will be constructed of a ¾ inch plate stainless steel skin with a core of reinforced concrete.
- The Memorial was designed by James Ingo Freed, internationally renowned architect of Pei Cobb Freed & Partners. Mr. Freed is widely recognized for designing the U.S. Holocaust Memorial Museum in Washington D.C. and other prominent structures throughout the U.S.
- Global engineering firm Ove Arup & Partners worked with Pei Cobb Freed & Partners in the development of the Memorial's spire structure.
- Embedded in granite beneath the spires will be the USAF "star," which has had a long tradition of gracing Air Force aircraft and missiles, and is central to the rank insignia of every enlisted member of the Air Force.

Other Elements

- Other key elements of the Memorial include a paved Runway to Glory at the site entrance, a bronze Honor Guard statue, two granite inscription walls located at either end of a parade ground area and a Glass Contemplation Wall depicting the "missing man formation," a final tribute paid to fallen airmen.
- The Memorial's surrounding spaces will be landscaped to create a memorial park and parade ground overlooking the nation's capital and the site will also include parking for 24 vehicles and three busses.
- Internationally renowned sculptor Zenos Frudakis sculpted the Memorial's bronze Honor Guard. The 8 foot tall, four figure sculpture will be reflective of all "airmen," those men and women presently serving, those that have served and those that will serve.
- Mr. Frudakis' previous works include life size sculptures of Dr. Martin Luther King, Jr. and Arnold Palmer, as well as Generals Douglas MacArthur, George C. Marshall and William Yarborough, along with many others.
- The two inscription walls located at each end of a central lawn will be 56 feet in length, 10 feet in height and one foot thick. They are being constructed using monolithic Jet Mist granite and both include a two and a half inch outer inscription panel made from Absolute Black granite. The south wall will honor Air Force values and campaign accomplishments (including those of the Air Force's predecessor organizations), and the north wall will honor valor and sacrifices made by so many "airmen."
- The Jet Mist granite used comes from a quarry in nearby Culpepper, Virginia. The Absolute Black granite used on the outer inscription panels has been sourced from Africa and is the purest black granite found on earth.
- The Glass "Missing Man" Contemplation Wall will be made out of five layers of PPG low iron (very clear) glass, which are laminated together. The assembled wall will be nine feet wide and 10 feet tall.
- The "Missing Man" formation will be engraved on the front and back of the glass assembly and will be illuminated from below. This Wall is where visitors may take a few moments to remember those that have paid the ultimate sacrifice or that have otherwise passed on.

Construction & Development

- Centex Construction, LLC, of Dallas, Texas has been contracted to build the Memorial.
- Cianbro Corporation of Baltimore, Maryland has been subcontracted to erect the Memorial's stainless steel spires.
- The ground breaking for the Memorial took place on September 15, 2004, and construction commenced on January 15, 2005.
- The total weight of the spires (stainless steel, reinforcing steel and concrete) will be approximately 7,300 tons (5,000 tons below ground, 2,300 tons above ground).
- The Air Force Memorial's structural design took more than one year to develop, from concept to complete detailing. The structural engineers used computer modeling validated with wind tunnel testing to assess the necessary stiffness and strength of the structure.
- Because the spire structure can tend to sway during certain combinations of wind speed and direction, a "ball-in-box" damping system will be utilized to mitigate the swaying effect.
- A time proven engineering solution, the "ball-in-box" dampers contain 13 lead balls, each are 2,000 pounds and 20 inches in diameter encased in stainless steel shells that roll freely within octagonal boxes lined with synthetic damper pads. As the balls impact the damping pads, energy is dissipated and structural movement is constrained.
- Arup's Advanced Technology Group in the United Kingdom developed this custom system and has fine-tuned the precise dimensions and position of each of the boxes within all three spires to ensure that an appropriate level of damping is achieved.
- The tallest spire will contain a stack of six ball-in-box dampers, the medium spire four and the shortest spire three.
- The three spires structure will be supported by a system of concrete foundations, which consist of concrete caissons, concrete pile caps and concrete grade beams that extend approximately 40 feet below finished elevation.
- The caissons are three feet in diameter (six feet at the belled base). The pile caps are approximately 23 feet wide and eight feet deep and range in length from 32 feet to 56 feet. The pile caps are connected by a continuous triangular grade beam, approximately eight feet wide by 16 feet deep and with a perimeter of about 300 feet. The spires are connected to the concrete foundations with a two and a half inch base plate and anchored by one and a quarter inch post-tensioned reinforcing steel bars.
- A 300-foot "ringer" crane is being used to install the Memorial's three stainless steel spires.

The Air Force Memorial Foundation

- The Foundation was incorporated in 1992 as a tax-exempt, charitable, historical, and educational organization. It has been granted 501(C)(3) status by the Internal Revenue Service, thus making contributions tax exempt.
- Ross Perot, Jr., Chairman of the Board, Perot Systems Corporation and Chairman of Hillwood Development Corporation in Dallas, is Chairman of the Foundation's Board of Trustees. There are 19 Trustees of the Foundation. Chairman of the Board, Perot Systems Corporation

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- Major General Edward F. Grillo, Jr., (USAF Retired), is President of the Foundation.

**Additional information about the Air Force Memorial can be found on-line at
www.airforcememorial.org.**

**To source images, arrange a tour of the Memorial site during construction or to arrange an
interview with Maj. General Edward Grillo, President, Air Force Memorial Foundation,
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